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REMARKS

This amendment is responsive to the Final Office Action dated February 8, 2007. Applicant has amended claims 1 and 17. Claims 1–25 are pending.

Withdrawal of Finality of the Office Action

Applicant requests withdrawal of the finality of the Office Action because the Examiner has rejected a claim not amended by the Applicant on newly cited art. In particular, the Examiner has rejected non-amended claim 13 under 35 U.S.C. § 103(a) as unpatentable over Kunz in view of newly cited Krebs. MPEP 706.07(a) states that:

> [A] second or any subsequent action on the merits in any application . . . will not be made final if it includes a rejection, on newly cited art, other than information submitted in an information disclosure statement . . ., of any claim not amended by applicant or patent owner in spite of the fact that other claims may have been amended to require newly cited art.

Thus, the finality of the Office Action is improper in view of the Examiner's rejection of claim 13, and should be withdrawn.

Claim Rejection Under 35 U.S.C. § 112

In the Final Office Action, the Examiner rejected claims 1 and 17 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description. In particular, the Examiner stated that the specification does not contain a written description for the claim limitation of an antenna that forms an electromagnetic field "exceeding a threshold level necessary" for communication with RFID tags.

Applicant has amended claims 1 and 17 for purposes of clarification and for purposes unrelated to patentability to recite that the antenna forms an electromagnetic field at or above a threshold necessary for communication with RFID tags.

To the extent the Examiner maintains the rejection, Applicant submits that one of ordinary skill would reasonably conclude the inventors contemplated an antenna that forms an electromagnetic field at or above a threshold level necessary for communication with RFID tags, as required by amended claims 1 and 17.

MPEP 2163.02 specifically addresses the standard for determining compliance with the written description requirement. In this section, consistent with legal principles, the MPEP states that whenever the issue arises, the fundamental factual inquiry is whether the specification conveys with *reasonable clarity* to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed.[1] MPEP 2163, heading 1, states that a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can *reasonably conclude* that the inventor had possession of the claimed invention.

Applicant's specification as a whole, and in particular, paragraphs [0002]–[0007] and [0045]–[0046], describes an antenna that forms an electromagnetic field at or above a threshold level necessary for communication with RFID tags with sufficient detail that one skilled in the art could reasonably conclude that the inventor had possession of the claimed invention. For example, Applicant's specification at paragraph [0004] states:

> The transmitter of the RFID reader outputs RF signals through the antenna to create an electromagnetic field that enables the tags to return an RF signal carrying the information. In some configurations, the transmitter initiates communication, and makes use of an amplifier to drive the antenna with a modulated output signal to communicate with the RFID tag.

As another example, Applicant's specification at paragraph [0045] states:

> In general, conductive shield 66 is located a distance D3 from outer loop 64, and the distance D3 therefore defines the outer-most regions of the tag communication zone created by antenna 60. In other words, D3 defines the outermost limits of non-shielded inner region 61 in which the tags may be read when antenna 60 is driven with sufficient power to generate a magnetic field having sufficient strength to achieve successful communication throughout the inner region.

One of ordinary skill in the art would reasonably understand that an electromagnetic field generated for communication with RFID tags may be at or above a threshold level necessary for communication with the RFID tags. Consequently, claims 1 and 17 comply with the written description requirement of 35 U.S.C. 112, first paragraph.

[1] MPEP 2163.02 (emphasis added).

Claim Rejection Under 35 U.S.C. § 103

In the Final Office Action, the Examiner rejected claims 1–25 under 35 U.S.C. 103(a) as being unpatentable over Kunz (US 6,127,989) in view of Krebs (US 2004/0224135). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

With reference to independent claims 1 and 17, for example, the applied references lack any teaching that would have suggested a substantially-contiguous conductive shield positioned a distance from the antenna within a plane parallel to the antenna to define an outermost region of a communication zone within the plane parallel to the antenna, and wherein the conductive shield has a width that extends in the plane parallel to the antenna such that the electromagnetic field at any region beyond the conductive shield is below the threshold level.

First, in rejecting claims 1 and 17, the Examiner stated that Kunz teaches an RFID system comprising an antenna that forms an electromagnetic field exceeding a threshold level necessary for communication with RFID tags. Applicant respectfully submits that the Examiner has misunderstood the Kunz reference. In particular, Applicant notes that the integrated circuit and antenna coil of FIGS. 1 and 2 of Kunz are described as being part of a transponder device, i.e., an RFID tag.[2] Kunz provides no teaching or suggestion that the antenna within the transponder forms an electromagnetic field at or above a threshold level necessary for communication with other tags. In fact, Applicant is unable to find any reference in Kunz to inter-tag communication, and there is no teaching or suggestion that the Kunz RFID tag (transponder) creates an electromagnetic field at or above a threshold level necessary for communication with other tags.

Second, the Examiner asserted that it would have been obvious to modify the antenna of the Kunz transponder to include the conductive shield of Krebs "in order to allow the reading of desired RFID tags while preventing the reading of undesired RFID tags."[3] However, such a modification makes little sense in this case. Krebs describes a large shield applied to an entire shelf. Applicant questions the physical possibility of incorporating the Krebs shelf shielding

[2] Kunz, col. 1, ll. 12–15.
[3] Office Action dated February 8, 2007, at page 4.

within an individual RFID tag (transponder), as suggested by the Examiner. Moreover, since the transponder antenna of Kunz is not described as communicating with other tags, it would seem pointless to modify the RFID tag of Kunz to include a conductive shield to prevent the antenna from reading undesired tags. For at least these reasons, such a modification would therefore not have been obvious to one of ordinary skill in the art in possession of Kunz and Krebs.

Moreover, even if such a modification were somehow made to the Kunz RFID tag (transponder), it still would not achieve Applicant's invention as claimed. As stated above, Kunz fails to teach or suggest an antenna that forms an electromagnetic field at or above a threshold level necessary for communication with RFID tags. Thus, even if the Kunz transponder were modified to include the conductive shield of Krebs, the result would not conform to Applicant's invention as claimed.

In addition, Krebs fails to teach or suggest a substantially-contiguous conductive shield positioned a distance from the antenna within a plane parallel to the antenna to define an outermost region of a communication zone within the plane parallel to the antenna. Krebs describes an RFID antenna printed on a substrate of a shelf. Krebs states that a conductive mesh may be incorporated into a surface to form an RFID shield that prevents stray signals from other shelves reaching the RFID antenna.[4] However, in contrast to the requirement of claims 1 and 17, which require that the conductive shield be positioned a distance from the antenna within a plane parallel to the antenna, the conductive mesh of Krebs is positioned completely overlapping the antenna within a plane parallel to the antenna.

[4] Krebs, Abstract.

FIG. 7 of Krebs is reproduced below.

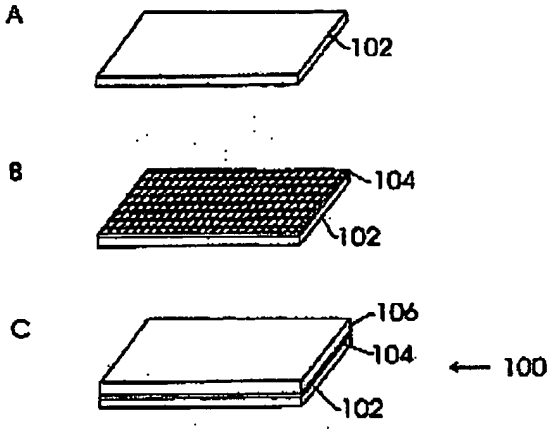

FIG. 7

As illustrated in FIG. 7 of Krebs, and also in FIGS. 3 and 9, the conductive mesh 104 of Krebs forms a layer of shield laminate 100 that completely overlaps with the RFID antenna.

Applicant's FIG. 5 is also reproduced below to illustrate the differences between the Krebs shield and the requirements of the embodiments of claims 1 and 17.

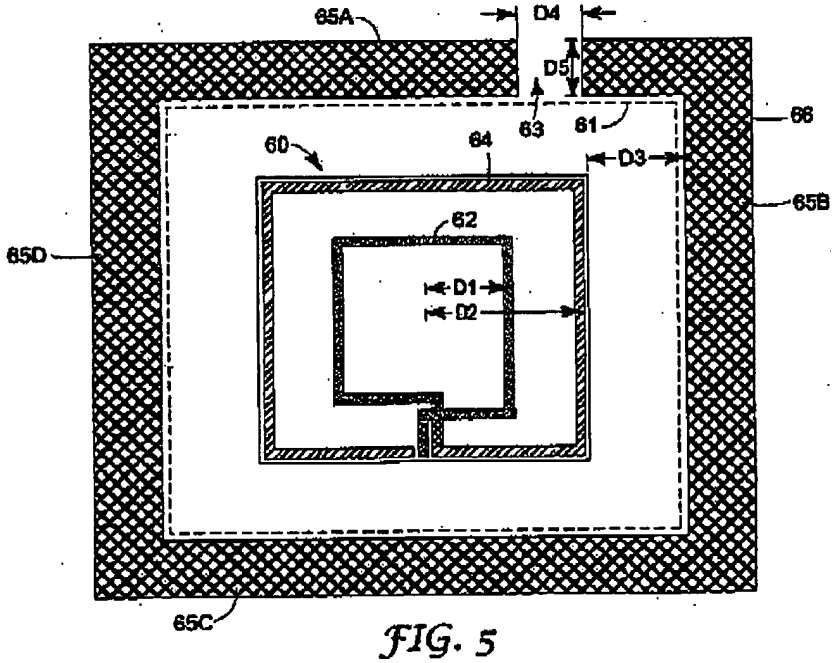

FIG. 5

As shown in Applicant's FIG. 5, the conductive shield 66 positioned a distance from the antenna within a plane parallel to the antenna the antenna 60. In other words, at least one edge of the

conductive shield 66 is positioned a distance away in a plane parallel to the antenna from at least one edge of an outer loop of the antenna. As shown in FIG. 5, the antenna may be positioned around the antenna in the plane parallel to the antenna. FIG. 6 of Applicant's specification further shows how this may define an outermost region of a communication zone within the plane parallel to the antenna.

Krebs provides no teaching or suggestion that the conductive mesh is positioned a distance from the antenna within a plane parallel to the antenna. Applicant has amended claims 1 and 17 to further clarify this important distinction. Amended claims 1 and 17 recite that the conductive shield defines an outermost region of a communication zone within the plane parallel to the antenna. Krebs fails to teach or suggest such a feature.

In fact, if the conductive mesh of Krebs were positioned a distance from the antenna within a plane parallel to the antenna, and not overlapping with the antenna, the mesh would likely not work to shield the antenna from stray signals from other shelves in the manner intended by Krebs. For example, referring to FIG. 8, 9, and 10 Krebs describes that using the shields allows shelves to be created and used in close proximity without stray RFID signals of an item on one shelf being read and registered by antennas on other shelf.[5] If the conductive mesh of Krebs were positioned a distance from the antenna within a plane parallel to the antenna, to define an outermost region of a communication zone within the plane parallel to the antenna, the configuration described by Krebs would not operate to prevent stray RFID signals of an item on one shelf from being read and registered by antennas on other shelf.

Thus, as stated above, even if one of ordinary skill in the art were to modify the transponder antenna of Kunz to include the conductive mesh of Krebs, this would not result in Applicant's invention as claimed. Consequently, amended independent claims 1 and 17 are patentable over Kunz in view of Krebs.

Of course, the claims dependent on independent claims 1 and 17, i.e., claims 2–16, 18–25, incorporate all of the limitations of the respective base claims, and therefore are patentable for at least the reasons expressed above.

Moreover, the dependent claims recite a number of additional features that are likewise not suggested by Kunz or Krebs. For example, claims 2 and 18 specify that the width of the

[5] Krebs at paras. [0038]–[0040].

conductive shield within the plane parallel to the antenna shapes the electromagnetic field to extend substantially in a direction perpendicular to the antenna, and prevents the electromagnetic field from forming substantially over the conductive shield. Neither Kunz nor Krebs provides any teaching or suggestion that the conductive shield provides any such shaping properties within the plane parallel to the antenna. As described above, Krebs instead describes that the conductive mesh completely overlaps with the RFID antenna within the plane parallel to the antenna.

As another example, claims 3 and 19 specify that the conductive shield comprises planar conductive regions oriented to form a non-shielded inner region, and further wherein the antenna is disposed within the non-shielded inner region and parallel to the planar conductive regions. Claim 4 specifies that the conductive regions define at least one disconnect area that prevents the conductive shield from forming a closed conductive loop around the antenna. Kunz and Krebs fail to teach or suggest such a feature. In rejecting claims 3, 4, and 19, the Examiner stated that Kunz teaches a conductive shield meeting the limitations of these claims. However, as explained in detail in Applicant's Response dated November 7, 2006, Kunz fails to even teach or suggest a substantially-contiguous conductive shield. Krebs also fails to teach or suggest that the conductive regions form a non-shielded inner region in which the antenna is disposed.

As yet another example, claim 5 recites that the antenna comprises one or more conductive loops including an outer loop, and the conductive regions of the conductive shield are located at least a distance D from an outer loop of the antenna that is selected based on a radius of the outer loop. Neither Kunz nor Krebs provides any teaching or suggestion of selecting a distance D of the conductive regions from an outer loop of the antenna based on a radius of the outer loop. Similarly, claim 6 specifies that the antenna has a first conductive loop having a radius D1 and a concentric second conductive loop having a radius D2, and the conductive regions of the conductive shield are located at least a distance D3 from the outer loop, and wherein D3 is selected as approximately the average of D1 and D2. In contrast to the Examiner's assertion, neither Kunz nor Krebs provides any teaching or suggestion that the distance D3 of the conductive shield from the outer loop being selected based on the average of D1 and D2.

As a further example, claims 7 and 20 specify that each of the conductive regions have respective widths extending outward from the antenna, and further wherein each of the widths are selected based at least in part on the threshold level of the magnetic field necessary for RFID

communication between the antenna and the RFID tags. Claims 8 and 21 specify that each of the widths are selected to extend sufficiently in directions parallel to and outward from the antenna to prevent the electromagnetic field from forming in or above the conductive regions until the strength of the magnetic field reduces to below the threshold level. In contrast to the Examiner's assertion, the portion of Krebs cited by the Examiner does not even discuss conductive shielding, and certainly does not teach or suggest selecting the widths of the conductive regions based on the features recited in claims 7, 8, 20, and 21.

As another example, claims 9 and 22 specify that the antenna and the conductive shield are mounted to a working surface of an RFID check-in / check-out area. Claims 10 and 23 specify that the working surface has a recessed area and a non-recessed area, and further wherein the antenna is mounted to the recessed area of the working surface and the conductive shield is mounted to the non-recessed area. Contrary to the Examiner's assertion, Kunz is completely lacking of any such teaching or suggestion of these features, making no reference whatsoever to an RFID check-in / check-out area or a recessed area and a non-recessed area. Krebs similarly fails to teach or suggest these features.

As yet another example, claims 14 and 25 specify that the antenna comprises a plurality of conductive loops to produce the electromagnetic field, and wherein the conductive loops are spaced apart at least a distance D that is selected based on a dimension of the RFID tags with which the antenna communicates. Claim 15 specifies that wherein the distance D is selected to exceed a maximum dimension of the RFID tags. Claim 16 specifies that the RFID tags have a dimension of length M, and the distance D between each of the plurality of conductive loops is selected such that $D \geq M$. Contrary to the Examiner's assertion, Kunz fails to teach or suggest such features. Instead, the cited passage of Kunz provides no teaching of an antenna in which the spacing of loops of the antenna is selected based on a dimension of the RFID tags. Krebs similarly fails to teach or suggest these features.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1–25 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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